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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/535,629	03/24/2000	Jeffrey W. Scott	37398/SAH/C715	2082

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EXAMINER

NGUYEN, TUAN M

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 08/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/535,629

Applicant(s)

SCOTT, JEFFREY W.

Examiner

Tuan M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

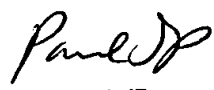
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 24 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

DETAILED ACTION

Drawings

1. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
2. The drawing (figs 1-1A, 3-10 and 14) is objected for minor informaty. The boxes show in figures 1-1A, 3-10 and 14 are not labeled as required by 37 CFR 1.83(a). Applicant is required to submit a drawing correction for approval as require by rule 37 CFR 1.123
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: fig 10 OSA (125), note col. 12, fig 12 the top (212), note col. 14 and fig 15 optical transparent epoxy (454), note col. 16. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1- 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 1 recites an encapsulated optoelectronic device without the recitation of any mean or structure, which render the claim confusing, vague and indefinite. The claim further recited whose surface is coated with a phase matching device comprised of a

dielectric constant similar to the encapsulant, the thickness of the phase matching layer designed to make the optoelectronic properties of the optoelectronic device the same both pre and post encapsulation. The claim fails to define any structure for the surface to be coated with a phase matching layer. It is not clear as what “the encapsulant” is mean. It is not clear as whether a “designed” is a matter of design choice or the design is part of the invention. The recitation of a coated surface, phase matching layer a dielectric constant, and the optoelectronic properties fail to define the invention. Claim 1 is drafted in such a way that the claim lacks any means or structure to define the invention.

With respect to claim 2 a method of fabricating an encapsulated optoelectronic device. The claim recites method step of coating the optoelectronic device instead of fabricating the optoelectronic device. The claim fails to provide any method steps for fabricating the optoelectronic device. Claim 2 recites nothing more than measuring and testing of the optoelectronic device.

With respect to claim 3 recites a method of fabricating an encapsulation VCSEL. The claim recites method steps of experimenting a matter of design choice without the recitation of any VCSEL structure. Claim 3 recites method steps of measuring and testing for a design choice of the coating layer. The claim is misleading, confusing, vague and indefinite.

With respect to claims 4-7, claim 1 fails to provide any structure to support of the limitations as recites in claims 4-7. There is no structure for “the first/second mirrors”. Claim 4 recites “adjacent” is not clear. The claim fails to clearly define the structure, which render the claim confusing, vague, and indefinite.

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With respect to claim 8-10, claim 1 recites an encapsulated optoelectronic device without the recitation of any mean or structure, which render the claims confusing, vague and indefinite.

With respect to claim 11 fails to provide any structure to support of the limitations as recites in claim recites 11. There is no structure to support the “disposed adjacent”. The claim fails to clearly define the structure, which render the claim confusing, vague, and indefinite.

With respect to claims 12-26 fails to clearly recite the encapsulated optoelectronic device, there is no structure to support the limitations as recites in claims 12-26, which render the claims confusing, vague and indefinite.

With respect to claim 30, there is no antecedent base recites in claim 2 to support “the initial laser”.

With respect to claims 27, 31-34 and 37, claims recite optical subassembly comprising a first plastic housing subassembly encapsulating. There is no means or structure to support the limitations, claim 27 further recites the phase matching layer designed to make one or more properties of the optoelectronic device of the optical transmitter the same both pre and post encapsulation. The claim fails to define any means or structure to support the subassembly and designed choice, which render the claims confusing, vague and indefinite.

With respect to claims 35 and 36, there are no method steps recited in claims 2, 35 and 36 to support of fabricating a laser structure.

With respect to claims 38-44, claim 3 recites measuring and testing steps, which fail to support the first/second mirrors on a substrate to define a laser structure.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1, 5 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurobe et al (US patent 5,432,812) in view of Kuczynski (US patent 6,356,686 B1).

With respect to claim 1, Kurobe et al discloses all elements at cols. 1-16, see figs 19-23, except for the encapsulation. Whereas Kuczynski discussed about the encapsulation, note cols. 1-9, see fig. 1. For the benefit from the encapsulation, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kurobe with the encapsulation as taught or suggested by Kuczynski.

With respect to claim 5, Kurobe et al discloses the wavelength layer, note cols. 12-14.

With respect to claim 8, Kuczynski discloses the wavelength in range from about 780 nm to about 860 nm, note cols. 3-12.

With respect to claims 9-10, Kuczynski discloses the wavelength in range about 850, note cols. 3-12. For the benefit of the wavelength in range from about 350 nm to about 700 nm and the wavelength range from 1200 nm to 1600 nm, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kurobe with the wavelength in range from about 850 nm as taught or suggested by Kuczynski, since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurobe et al (US patent 5,432,812) in view of Kuczynski (US patent 6,356,686 B1) further in view of Duthaler et al (US patent 6,312,304 B1).

With respect to claims 6 and 7, Kurobe et al and Kuczynski disclose all above except for the materials such as silicon oxide and silicon nitride. Whereas Duthaler et al discussed about the materials such as silicon oxide and silicon nitride, note cols. 10-11. For the benefit to apply the materials such as silicon oxide and silicon nitride, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kurobe with the materials such as silicon oxide and silicon nitride as taught or suggested by Duthaler.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kurobe et al (US patent 5,432,812) in view of Kuczynski (US patent 6,356,686 B1) further in view of Scott et al (US patent 6,392,256).

With respect to claim 4, Kurobe et al and Kuczynski disclose all above, except for the first and second mirrors. Whereas Scott et al discussed about the first and second mirrors, note cols. 10-12, see fig 5a. . For the benefit of the first and second mirrors, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Kurobe with the first and second mirrors as taught or suggested by Scott.

9. Claims 14-19, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al (US patent 6,392,256 B1) in view of Duthaler et al (US patent 6,312,304 B1).

With respect to claims 14-19, Scott et al discloses all above except for the material such as silicon oxide and silicon nitride. Whereas Duthaler et al discussed about the silicon oxide and silicon nitride, note cols. 3-11. For the benefit of used silicon oxide and silicon nitride, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Scott with the silicon oxide and silicon nitride as taught or suggested by Duthaler.

With respect to claim 21, Duthaler et al discloses the alternated of oxides and nitrides, note cols. 3-11.

10. Claims 2-3, 11-13, 20, 22-23, 27-33, 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al (US patent 6,392,256 B1) in view of Kurobe et al (US patent 5,432,812).

With respect to claims 2-3, Scott et al discloses a closely-spaced VCSEL and photodetector for applications requiring their independent operation comprises a substrate (201), a first mirror (202), a second mirror (204), an optical cavity (203), a phase layer (224), note cols.

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10-17, see fig 5a-16a. Claims 2-3 are considered as product by process in *re King* 801 F.2d 1324, 1326 USPQ 136,138 (Fed. Cir. 1986) it was held that: "Under the principles of Inherency, if a structure in the prior necessarily function in accordance with the limitations of a process or method claim of an application, the claim is anticipated". The court added, however, that: " This is not to say that the discovery of a new use for an old structure based on unknown properties of the structure might not be patentable to the discoverer as a process. *In re Hack*, 245 F.2d 246, 248,114 USPQ 161, 163 (CCPA 1957)."

With respect to claims 11-13 and 23, Kurobe discloses the phase matching layer, note cols. 14-17.

With respect to claims 20 and 22, Scott et al discloses all about the tuning layer, distributed Bragg reflector and second mirror, note cols. 10-16.

With respect to claim 27, Kurobe discloses the thickness of phase matching layer, note cols. 14-17, see figs 19a-24b.

With respect to claim 28, Scott et al discloses the transmitter, beam splitter and photodetector, note cols. 15-19, see figs 12a-19.

With respect to claim 29, Scott et al discloses the housing, lens and aligned in the optical path carrying, note cols. 2-3, see figs 1a-1b.

With respect to claim 30, Scott et al discloses the slope of the initial laser, note col. 17.

With respect to claims 31 and 37, Kurobe et al discloses the phase matching layer, note col. 14-17.

With respect to claim 32, Scott et al discloses the encapsulating optoelectronic device in plastic, note col.13, see figs 7a.

With respect to claim 33, Scott et al discloses the encapsulated optoelectronic device and coupling the plastic encapsulated optoelectronic device and aligned optical subassembly, note cols. 2-14, see figs 1a-1b.

With respect to claims 38-39, Scott et al discloses the first and second mirrors and the slope efficiency and surface reflection, note cols. 13-19.

With respect to claims 40 and 41, Scott et al discloses the encapsulating VCSEL in plastic, the lens and aligned optical sub assembly, note cols. 2-14, see figs 1a-7a.

11. Claims 24-26, 34-36 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al (US patent 6,392,256 B1) in view of Kurobe et al (US patent 5,432,812) further in view of Kuczynski (US patent 6,356,686 B1).

With respect to claim 24, Scott et al and Kurobe et al discloses all above the wavelength in the range from about 780 nm to about 860 nm. Whereas Kuczynski discloses the wavelength about 850 nm, note cols 3-12. For the benefit of the wavelength range from 780 nm to 860 nm, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Scott with the wavelength range as taught or suggested by Kuczynski.

With respect to claims 25-26, 34-36 and 42-44, Kuczynski discloses the wavelength about 850 nm, note cols 3-12. For the benefit of the wavelength range from 1200 nm to 1600 nm and from 350 nm to 700 nm, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Scott with the wavelength range as taught or suggested by Kuczynski, since it has been held that discovering an optimum value of a result

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effect variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Citation Of The Pertinent References

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Kuijk (US patent 6,396,712 B1) discloses method and apparatus for coupling circuit components.

The patent to Schneider, jr. et al (US patent 5,557,627) discloses visible wavelength semiconductor laser and arrays.

The patent to Holonyak, Jr. et al (US patent 5,425,043) discloses semiconductor laser.

The patent to Hahn et al (US patent 5,359,447) discloses optical communication with vertical cavity surface emitting laser operating in multiple transverse modes.

The patent to Jansson et al (US patent 5,067,788) discloses high modulation rate optical plasmon wavelength modulation.

Communication Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247. The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip
SPE
Art unit 2828

TMN
August 2, 2002